1.

Link: https://typeset.io/papers/face-recognition-using-deep-learning-as-user-login-on-qle28iqw

Literature Review of Face Recognition Using Deep Learning in Healthcare Kiosks

- **Introduction to Biometric Systems**: The paper discusses the advantages of using facial recognition as a biometric system compared to traditional methods like RFID cards and passwords. Facial recognition is highlighted as a more secure and user-friendly option, reducing the risks associated with lost cards or forgotten passwords .
- **Deep Learning in Face Recognition**: The authors propose a login system for healthcare kiosks that utilizes deep learning technology. This approach leverages the power of Convolutional Neural Networks (CNNs) to enhance the accuracy and reliability of face recognition systems. The integration of deep learning signifies a shift towards more advanced and efficient biometric authentication methods in healthcare settings .
- **CNN Architectures Tested**: The study evaluates four different CNN architectures: VGG16, ResNet50, Xception, and MobileNet. Each architecture is assessed based on its accuracy in recognizing faces for the login system. This comparative analysis provides insights into the performance of various deep learning models in real-time face detection scenarios .
- **Performance Results**: The results indicate that VGG16 achieved a total accuracy of 100% in accuracy testing but struggled with real-time detection. In contrast, ResNet50 demonstrated a high accuracy of 99.531% and performed well in real-time detection. Xception and MobileNet showed lower accuracies of 80.018% and 92.934%, respectively, with Xception also facing challenges in real-time detection .
- **Implications for Healthcare**: The findings of this paper suggest that implementing deep learning-based facial recognition systems in healthcare kiosks can significantly improve user authentication processes. This advancement not only enhances security but also streamlines user experience, making healthcare services more accessible and efficient **[**1**]**.
- **Conclusion**: Overall, the paper contributes to the growing body of literature on biometric systems in healthcare by demonstrating the effectiveness of deep learning techniques in face recognition. The results underscore the potential for these technologies to transform user login systems in healthcare environments, paving the way for further research and development in this field .

2.

Link: https://typeset.io/papers/face-recognition-using-deep-learning-as-user-login-on-35c13unc

Literature Review on Face Recognition in Healthcare Kiosks

The literature surrounding face recognition technology, particularly in healthcare settings, highlights several key areas of focus:

- **Biometric Systems**: Traditional biometric systems, such as fingerprint and iris recognition, have limitations, including the potential for loss or forgetfulness. This paper emphasizes the advantages of using facial recognition as a more reliable alternative for user login systems in healthcare kiosks .
- **Deep Learning Applications**: The integration of deep learning techniques, specifically Convolutional Neural Networks (CNNs), has revolutionized the field of image recognition. The paper explores various CNN architectures, including VGG16, ResNet50, Xception, and MobileNet, to assess their effectiveness in facial recognition tasks .
- **Performance Evaluation**: The study provides a comparative analysis of the performance of different CNN architectures in terms of accuracy. VGG16 achieved a remarkable accuracy of 100%, although it struggled with real-time detection. In contrast, ResNet50 demonstrated a high accuracy of 99.531% and performed well in real-time scenarios. Xception and MobileNet had lower accuracies of 80.018% and 92.934%, respectively, with Xception also facing challenges in real-time detection .
- **Real-time Detection Challenges**: The paper highlights the importance of not only achieving high accuracy in controlled environments but also ensuring that the system can correctly identify users in real-time situations. This aspect is crucial for the practical implementation of facial recognition systems in healthcare kiosks, where quick and accurate user identification is essential .
- **Future Directions**: The literature suggests that further research is needed to enhance the robustness of facial recognition systems, particularly in varying lighting conditions and diverse user demographics. This could involve refining existing models or developing new algorithms that can better handle real-world complexities.

3.

Link: https://typeset.io/papers/remicare-medicine-intake-tracker-and-healthcare-assistant-32p4hdax

Literature review: A Medicine Intake Tracker and Healthcare Assistant

The paper presents REMICARE, an innovative Android-based application designed to enhance medication adherence and facilitate communication between patients and healthcare providers. Here's a brief literature review based on the key features and functionalities of the application:

- **Automated Reminder Mechanism**: REMICARE incorporates an automated reminder system that allows patients to set notifications for their medication schedules. This feature is particularly beneficial in ensuring that patients take their medications on time, which is crucial for effective treatment outcomes .
- **User-Friendly Interface**: The application prioritizes a good user interface and easy navigation, making it accessible for users of all ages. This design consideration is essential for encouraging regular use and adherence to medication schedules .
- **Image Processing for Medication Management**: The application utilizes advanced image processing techniques, specifically a powerful CNN-RNN-CTC algorithm, to accurately manage multiple medications and their respective timings. This technology allows patients to input medication details easily, enhancing the overall user experience .
- **Cloud Storage for Medical Records**: REMICARE offers secure cloud storage for patients' medical records, including test reports and prescriptions. This feature not only ensures that important health information is readily available but also promotes better communication between patients and healthcare providers .
- **Doctor-Patient Interaction**: The application facilitates contact between patients and doctors, providing patients with access to doctor contact information based on availability. This feature is particularly useful during the COVID-19 pandemic, where remote consultations have become more prevalent .
- **Security Measures**: To protect user data, REMICARE employs the RSA algorithm for encryption and a gravitational search algorithm for secure cloud access. These security measures are vital in maintaining patient confidentiality and trust in the application .
- **Medication Expiry Notifications**: The application also includes a feature that notifies patients of their medication's expiry dates, helping to prevent the use of expired medications and ensuring patient safety .

4.

Link: https://typeset.io/papers/design-of-medical-robot-control-system-based-on-single-chip-3ncvmxf5

Literature Review of the Medical Robot Control System

The paper titled "Design of medical robot control system based on single-chip microcomputer" presents a novel approach to enhancing medical operations, particularly in the context of COVID-19 prevention. Here are the key points derived from the paper:

- **Objective and Motivation**: The primary goal of the research is to develop a medical robot that can assist in managing COVID-19 prevention efforts. This is crucial for saving manpower and improving the efficiency of healthcare services during the pandemic .
- **Technological Framework**: The robot is designed using a single-chip microcomputer, specifically the STC89C52, which serves as the main control unit. This choice of technology allows for efficient processing and control of the robot's functions .
- **Obstacle Detection and Navigation**: The robot employs infrared sensors for obstacle detection, ensuring safe navigation within medical environments. Additionally, a tracking module is utilized to determine the optimal path for the robot, enhancing its operational efficiency .
- **Motor Control Mechanism**: The control of the robot's movement is achieved through two DC motors, managed by an L298N drive template. The speed difference between the motors allows for precise maneuvering, which is essential in a dynamic hospital setting .
- **Intelligent Path Planning**: A genetic algorithm is implemented within the intelligent tracking module to optimize the robot's path for inspections. This advanced algorithm helps the robot navigate effectively to perform its tasks, such as entering wards for disinfection .
- **Data Collection and Monitoring**: The robot is equipped with an OV2640 camera, driven by an STM32F4 microcontroller, to collect data and perform facial mask recognition using the yolov5s algorithm. This capability is vital for monitoring compliance with health protocols in medical facilities .
- **Real-time Communication**: The collected information is transmitted to a computer, enabling real-time monitoring of patients' conditions. This feature significantly enhances the safety and efficiency of medical staff by providing timely updates .

5.

Link: https://typeset.io/papers/an-android-based-medication-reminder-system-based-on-ocr-188vpjhs1c

Literature Review on Medication Reminder Systems

- **Importance of Medication Adherence**: Medication adherence is crucial for effective treatment and recovery. Patients often forget to take their medications on time, which can lead to delayed recovery from illnesses. This highlights the need for systems that can assist patients in managing their medication schedules effectively .

- **Existing Solutions**: The literature discusses various applications aimed at reducing medication administration errors. For instance, the Wedjat smartphone application is mentioned as a tool designed to help patients avoid such errors. This indicates a growing interest in technology-based solutions for medication management .
- **Technological Advancements**: The proposed system in the paper utilizes an Android-based application that leverages Optical Character Recognition (OCR) and Artificial Neural Networks (ANN) to enhance the accuracy of medication reminders. The integration of ANN allows for better character recognition, which is essential for interpreting handwritten prescriptions accurately .
- **Market Considerations**: The choice to develop the application specifically for Android devices is based on the platform's significant market share compared to other operating systems. This decision reflects a strategic approach to reach a broader audience and ensure that the application is accessible to a larger number of users .
- **Future Directions**: The literature suggests that while current systems provide basic reminder functionalities, there is potential for future enhancements. These could include features such as personalized medication information, dosage details, and the ability to add reminders for specific days of the week. Such improvements would make the system more user-friendly and effective in promoting medication adherence .

6.

Link: https://typeset.io/papers/perspectives-of-face-recognition-with-medical-applications-40t243trqa

Literature review of Face Recognition in Medical Applications

- **Development of Face Recognition**: Face recognition technology has evolved significantly, becoming a prominent topic in engineering. This evolution has paved the way for its applications in various fields, including medicine. The paper discusses the trends in face recognition development, highlighting its increasing relevance in medical contexts .
- **Medical Applications**: The paper analyzes how face recognition can be utilized in medical settings. This includes potential uses in patient identification, monitoring, and enhancing the accuracy of medical records. The integration of face recognition in healthcare can streamline processes and improve patient care .
- **Deep Learning Integration**: The paper emphasizes the synergy between face recognition and deep learning technologies. Deep learning enhances the capabilities of face recognition systems, making them more effective in complex medical

scenarios. This combination is expected to lead to innovative solutions in medical engineering .

- **Rehabilitation Robotics**: One of the intriguing applications discussed is the use of face recognition in rehabilitation robot training. By incorporating face recognition, rehabilitation robots can better interact with patients, personalize therapy sessions, and track progress more effectively. This application showcases the potential for face recognition to contribute to patient rehabilitation and recovery.
- **Future Prospects**: The paper concludes with a discussion on the future prospects of face recognition in medicine. As technology continues to advance, the potential for face recognition to transform medical practices is significant. The ongoing research and development in this area suggest that face recognition will play a crucial role in enhancing healthcare delivery and patient outcomes .

7.

Link: https://typeset.io/papers/a-tuning-strategy-for-face-recognition-in-robotic-2ox47jxbyg

Literature review of Face Recognition in Robotics

- **Importance of Face Recognition**: Face recognition is crucial for enabling robots to interact with humans effectively. In robotic applications, it is essential to identify individuals before allowing interaction, ensuring safety and personalization in service delivery.
- **Video-Based Recognition**: The paper focuses on video-based face recognition, which is particularly relevant for mobile robots equipped with cameras. This method allows for continuous tracking of individuals, which is necessary for estimating their positions and maintaining interaction.
- **Methodology**: The authors explore various still-image-based face recognition methods to determine the most effective image projection and classifier combinations. They specifically highlight the use of Principal Component Analysis (PCA) and Support Vector Machines (SVM), enhanced by genetic algorithm optimization. This approach is shown to outperform traditional classifiers like eigenface and Fisherface, which serve as benchmarks in their experiments .
- **Particle Filtering Framework**: The integration of face recognition into a particle filtering framework is a significant contribution of this paper. This method allows for the fusion of different measurement sources, positioning particles based on face classification probabilities. This is particularly beneficial in dynamic environments where the robot must adapt to changing conditions.
- **Robustness in Real-World Scenarios**: The paper presents evaluations conducted in crowded and continuously changing indoor environments. The results demonstrate the robustness of the proposed tracking system, indicating its effectiveness in real-

world applications where face recognition and tracking are challenged by various factors .

- **Future Directions**: The authors conclude with a discussion on potential extensions of their work, suggesting that further research could enhance the capabilities of face recognition systems in robotic applications. This could include improvements in algorithm efficiency, accuracy, and adaptability to different environments .